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Sommario/riassunto	This book discusses dynamic modeling, simulation, and control strategies for Photovoltaic (PV) stand-alone systems during variation of environmental conditions. Moreover, the effectiveness of the implemented Maximum Power Point Tracking (MPPT) techniques and the employed control strategy are evaluated during variations of solar irradiance and cell temperature. The simulation results are based on the reliability of the MPPT techniques applied in extracting the maximum power from the PV system during the rapid variation of the environmental conditions. The authors review two MPPT techniques

implemented in PV systems, namely the perturb and observe (P&O) MPPT Technique and the Incremental Conductance (InCond) MPPT technique. These two MPPT techniques were simulated by the MATLAB/Simulink and the results response of the PV array from voltage, current, and power are compared to the effect of solar irradiation and temperature change. Discusses dynamic modeling, simulation, and control strategy of PV stand-alone systems during variation of the environmental conditions; Evaluates the effectiveness of the implemented Maximum Power Point Tracking (MPPT) techniques and the employed control strategy, during variations of solar irradiance and the cell temperature; Simulates two MPPT techniques using MATLAB/Simulink and compares the response of the PV array from voltage, current, and power to the effect of solar irradiation and temperature change; Describes an efficient control strategy to enhance the Battery-Supercapacitor Hybrid Energy Storage System (BS-HESS), appropriate for PV stand-alone systems.